

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)

2. (Original) An image sensor test apparatus ~~as set forth in claim 1, further provided with~~ configured to bring input/output terminals of an image sensor into contact with a contact part of a test head so as to input/output electrical signals with respect to input/output terminals of the image sensor from the test head while emitting light to a light receiving surface of the image sensor from a light source, the image sensor test apparatus comprising:

a contact arm configured to hold the image sensor and bring the image sensor into contact with the contact part of the test head;

a moving device configured to move the contact arm;

an attachment portion configured to attach the light source to the image sensor test apparatus;

a calculator configured to calculate a relative amount of deviation of an optical axis of the light receiving surface of the image sensor with respect to an optical axis of the light source;

a first image capturing ~~means for capturing an~~ device configured to capture a first image of ~~[[an]]~~ the image sensor in the state held at ~~said the~~ contact arm from ~~said the~~ light receiving surface side; and-

an image ~~processing means for recognizing~~ processor configured to recognize the relative position of ~~said the~~ image sensor in the state held at ~~said the~~ contact arm with

respect to ~~said the~~ contact part based on ~~image information captured by said the~~ first image capturing means,

~~said correcting means provided at said base side and correcting a corrector~~
~~configured to correct~~ the position of ~~said the~~ contact arm in the state holding ~~said the~~ image sensor based on the relative amount of deviation of the optical axis of ~~said image~~ sensor calculated by ~~said calculating means the calculator~~ and the relative position of ~~said the~~ image sensor recognized by ~~said the~~ image processing means processor.

3. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in claim 1 ~~claim 2~~, wherein ~~said calculating means the calculator~~ calculates ~~said the~~ relative amount of deviation of the optical axis of the image sensor with respect to the optical axis of the light source based on the electrical signals outputted from the ~~input and output~~ input/output terminals of ~~said the~~ image sensor with respect to the contact part of ~~said the~~ test head while emitting light from ~~said the~~ light source toward the light receiving surface of ~~said the~~ image sensor in the state contacting ~~said the~~ contact part.

4. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in claim 2, wherein ~~said the~~ image processing means ~~recognize~~ processor recognizes the relative position of ~~said the~~ image sensor with respect to ~~said the~~ contact part based on a chip of ~~said the~~ image sensor in the first ~~image information captured by said first image capturing means~~.

5. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in claim 2, wherein ~~said the~~ image processing means processor recognizes the relative position of

said the image sensor with respect to said the contact part based on ~~input and output~~
~~input/output~~ terminals of said the image sensor in the first ~~image information captured by~~
said ~~first image capturing means~~.

6. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in claim
2, wherein

~~the apparatus is further provided with~~ further comprising a transparent
carrying surface on which said the image sensor is carried, wherein:

said the contact arm has an upper contact for electrically connecting the ~~input and~~
~~output~~ input/output terminals led out to the surface of said the image sensor opposite to
the light receiving surface to said the contact part, and

said the carrying surface is movable to any position in an X-Y plane substantially
parallel to said the contact part.

7. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in claim
2, wherein

~~the apparatus is further provided with~~ further comprising a second image
capturing means ~~for capturing and~~ device configured to capture a second image of said
the contact part, ~~and~~ wherein

said the ~~image processing means~~ processor recognizes the relative position
of said the image sensor in the state held at said the contact arm with respect to said the
contact part based on the first ~~image information captured by said first image capturing~~
~~means~~ and said the second image capturing means.

8. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in ~~claim~~
~~+ claim 2~~, wherein each contact arm ~~is provided with~~ comprises:

a holding side arm ~~holding said~~ configured to hold the image sensor[,,];

a root side arm fixed to ~~said the~~ moving means device[,,]; and

a lock-and-free means device provided between ~~said the~~ holding side and ~~said the~~
root side arms and configured to be able to lock or free planar movement of ~~said the~~
holding side arm with respect to ~~said the~~ root side arm in an X-Y plane substantially
parallel to ~~said the~~ contact part.

9. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in claim
8, wherein each contact arm [[is]] further ~~provided with~~ comprises a tilting means device
configured to be able to rotate ~~said the~~ image sensor about any axis parallel to ~~said the~~ X-
Y plane.

10. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in
claim 8, wherein ~~said correcting means~~ the corrector has drive units ~~moving said~~
configured to move the holding side arm freed by ~~said the~~ lock-and-free means device to
any position in ~~said the~~ X-Y plane.

11. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in
claim 10, wherein ~~said the~~ drive units include:

a first drive unit ~~moving said~~ configured to move the holding side arm in the X-
axial direction in ~~said the~~ X-Y plane[,,];

a second drive unit ~~moving said~~ configured to move the holding side arm in the Y-axial direction~~[[.]]~~; and

a third drive unit ~~rotating said~~ configured to rotate the holding side arm about any point within ~~said the~~ X-Y plane.

12. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in claim 10, wherein ~~said the~~ carrying surface moves in ~~said the~~ X-Y plane by the drive unit provided in ~~said correcting means~~ the corrector.

13. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in claim 8, wherein each holding side arm has one or more abutting members contacting ~~said correcting means~~ the corrector.

14. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in claim 13, wherein each abutting member ~~is provided with~~ has either a projection or recess formed at a front end of ~~said the~~ abutting member, and ~~said correcting means is provided with~~ the corrector has the other of the projection or recess engageable with the above projection or recess.

15. (Currently Amended) ~~An~~ The image sensor test apparatus as set forth in ~~claim 1~~ claim 2, wherein a ~~reflecting means~~ reflecting reflector configured to reflect an image is provided on the optical axis of ~~said the~~ first image capturing ~~means~~ device.

16. (Canceled)

17. (Currently Amended) An image sensor test method as set forth in claim 16, ~~further provided with for bringing input/output terminals of an image sensor into contact with a contact part of a test head by a contact arm and inputting/outputting electrical signals with respect to input/output terminals of the image sensor from the test head while emitting light on light receiving surface of the image sensor from a light source, the method comprising:~~

calculating a relative amount of deviation of an optical axis of the image sensor with respect to an optical axis of the light source;

a first image capturing step of capturing an a first image of said the image sensor in the state held at said the contact arm from said the light receiving surface side and;

a first recognizing step of recognizing the relative position of said the image sensor in the state held at said the contact arm with respect to said the contact part based on the first image information captured in said first image capturing step; and

in said first correcting step, the position of said the contact arm in the state holding said the image sensor is corrected based on the relative amount of deviation of the optical axis of said image sensor calculated in said calculating step and the relative position of said the image sensor recognized in said first recognizing step.

18. (Currently Amended) ~~An~~ The image sensor test method as set forth in claim 16 ~~claim 17~~, wherein, ~~in said calculating step, said the~~ relative amount of deviation of the optical axis of the image sensor with respect to the optical axis of the light source is calculated based on the electrical signals outputted from the input and output input/output terminals of said the image sensor with respect to the contact part of said the test head

while emitting light from a light source toward a light receiving surface of said the image sensor in the state contacting said the contact part.

19. (Currently Amended) ~~An~~ The image sensor test method as set forth in claim 17, wherein, ~~in said first recognizing step,~~ the relative position of said the image sensor with respect to said the contact part is ~~recognized~~ based on a chip of said the image sensor in the first image-information-captured-in-said-first-image-capturing-step.

20. (Currently Amended) ~~An~~ The image sensor test method as set forth in claim 17, wherein, ~~in said first recognizing step,~~ the relative position of said the image sensor with respect to said the contact part is ~~recognized~~ based on ~~input-and-output~~ input/output terminals of said the image sensor in the first image-information-captured-in-said-first-image-capturing-step.

21. (Currently Amended) ~~An~~ The image sensor test method as set forth in claim 17, further-provided-with comprising:

a-second-imaging-step-of capturing an a second image of said the contact arm in the state not holding said the image sensor[[,]];:

a ~~third image capturing step~~ of capturing an a third image of said the image sensor in a state not held by said the contact arm from the light receiving surface side[[,]];:

a-second-recognizing-step-of recognizing a relative position of said the image sensor with respect to said the contact arm based on the second image information-captured-in-said-second-imaging-step and the third image-information-captured-in-said-third-imaging-step; and

~~a second correcting step of correcting the position of said the image sensor in the state not held by said the contact arm based on the relative position of said the image sensor with respect to said the contact arm~~ ~~recognized in said second recognizing step.~~

22. (Currently Amended) ~~An~~ The image sensor test method as set forth in claim 17, wherein, ~~in said first recognizing step,~~ the relative position of said the image sensor in the state held at said the contact arm with respect to said the contact part is ~~recognized further based on the image information capturing said the contact part.~~

23. (Currently Amended) ~~An~~ The image sensor test method as set forth ~~claim 16~~ claim 17, wherein the contact arm has:

a holding side arm configured to hold the image sensor;

a root side arm fixed to a moving device configured to move the contact arm; and

a lock-and-free device provided between the holding side and the root side arms and configured to be able to lock or free planar movement of the holding side arm with respect to the root side arm in an X-Y plane substantially parallel to the contact part,

the image sensor testing method further comprising:

said first correcting step includes a step of correcting a moving the root side contact arm of said contact arm by making it move relative to [[a]] the holding side contact arm of said contact arm in an X-Y plane substantially parallel to said contact part of the root side contact arm in the free state of the lock-and-free device; and [[,]]

then locking said the root side contact arm with respect to said the holding side contact arm by the lock-and-free device.